ACCOUNTING RATIOS AS A VERITABLE TOOL FOR CORPORATE INVESTMENT DECISIONS: A STUDY OF SELECTED ORGANIZATIONS IN DELTA STATE

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Abstract
This study was carried out to investigate accounting ratios as a veritable tool for corporate investment decisions: A study of selected organizations in Delta State. A set of structured questionnaire was used as the instrument for data collection and administered on eighty (80) respondents of the organizations under study in Delta State randomly selected using Taro-Yemane formula, the sample size from a population of 100 is 80 respondents at 95% confidence level. Data analysis was made using simple percentage tables and hypotheses were tested using the pearson product moment correlation co-efficient and the t-test at 0.05% level of significance. The result showed that positive and significant relationship exists between accounting ratios and the study of liquidity position of an organization. The result also showed that positive and significant relationship exist between accounting ratios in providing avenue for examining the operational efficiency of management in an organization. It was concluded that accounting ratios are necessary for the performance and survival of an organization. The study, however, recommended that organizations should never base conclusion on ratio, non-recurring and extra-ordinary items whether profit or loss should be eliminated when computing ratios, interpretation of results according to the general business conditions and a host of others for effective application of accounting ratios for proper investment decisions in corporate organizations.

Introduction
It is quite obvious that small or large enterprises have to rely on their ability to attract equity and debt capital to meet their asset financing requirements and other ancillary services. The existing or potential investors, lenders and creditors of the firm face an identical task of assuring themselves that their decisions to deal with the firm is based on a calculated risk. Therefore creditors will be more interested in the firm's ability to honour its short term indebtedness when they become due whereas a shareholder will be more interested in the dividends and bonus issues. However, they are all interested in assessing the firm's strengths and weakness.

In the light of the foregoing, creditors, lenders and investors gauge the firm's ability to meet their objectives on the information disclosed in the financial statements. A financial analyst should be concerned with the identification of symptoms (significant trends) revealed by the financial statements to access the financial economic, and managerial condition of the firm. He must equally identify any major changes that have occurred or are likely to occur, which would invalidate predictions based on past trends.
The underlying purpose of financial statements analysis is to aid in the evaluation of management performance. Essentially the ratios analysis is included to assist in assessing the past management performance with reference to liquidity, leverage or gearing, efficiency, profitability and equity. Thus, this study is therefore aimed at carrying out an empirical study on the accounting ratios as a veritable tool for corporate investment decisions: A study of selected organizations in Delta State with a view to identifying the need for accounting ratios, in enhancing proper investment decisions.

Statement of the Problem

Ideally, a comprehensive analysis of current performance and financial position is normally acknowledged as a necessary prerequisite to most important business decisions. In attempting to interpret the information disclosed in the financial reports and assessing performance or predicting the future, it is important to be aware of the limitations, imposed by accounting conventions and methods of valuation.

Ratio analysis is the most widely used technique for interpretation and comparing financial reports. The use of ratios on a comparative basis can be very useful because they summarize briefly relationships and results which are significant to an appreciation of critical business indicators of performance.

This study therefore seeks to investigate accounting ratios as a veritable tool for corporate investment decisions.

Objectives of the Study
The two main objectives of the study are:
1. To identify the extent to which accounting ratios enhances the liquidity position of an organization.
2. To find out whether accounting ratios provide avenue for examining the operational efficiency of management in an organization.

Research Questions
The following questions were raised to guide the study.
1. To what extent does accounting ratios enhance the liquidity position of an organization?
2. Does accounting ratios provide avenue for examining the operational efficiency of management in an organization?

Research Hypotheses
For the purpose of this study the following hypotheses are considered relevant.
1. Accounting ratios significantly help in determining the liquidity position of an organization.
2. Accounting ratios contribute to the operational efficiency of management in an organization.

Scope of the Study
The scope of the study comprised of selected manufacturing organizations in Delta State located in Warri, Asaba, Ughelli and Sapele. The task of this study was on accounting ratios as a tool for proper investment decisions in corporate organizations.

Literature Review
Conceptual Framework
A ratio is an expression of the relationship between two figures measurements, quantities, amounts or factors in the form of quotient, fraction or percentage. A ratio is simply one number expressed in
terms of another number to show the relationship between the two numbers (Olaegbe, 2012). It is the systematic calculations and evaluation of relationship between both internal and external financial reports in order to summarize key relationships and result towards the appraisal of financial performance.

Uses of Ratio in Business
According to Fadeyi (2011) ratio can be used in the following ways:

i. To interpret and compare financial reports.

ii. To help in assessment of liquidity, profitability and gearing of the firm.

iii. To check inventory positions.

iv. To indicate the overall operating efficiency and performance of the firm.

v. To indicate existing or potential trouble spots.

vi. To carry out intra-firm comparison and inter-firm comparison which assist in predicting the future.

vii. To provide effective guidelines for managerial decision when they are properly interpreted.

viii. To indicate trends which help in decision making and forecasting.

ix. To analyze collection of cash receivables.

x. To assist the decision maker in controlling the business firm's affairs by comparing actual ratio with base years ratios or standard ratios.

Classification of Ratios
A proposed business venture or project can also be evaluated considering the following classification of ratios (Ishola, 2012).

1. Profitability ratios
2. Liquidity or solvency ratios
3. Activity/operating efficiency ratios
4. Leverage ratios
5. Equity investor's ratios

1. Profitability ratios: Profitability demonstrates the efficiency of a firm in making investment and financial decision. These ratios enable us to assess whether there is a better return for the capital employed. They focus on assessing the overall organizational profitability and improving it whenever possible. Simply put, it measures the effectiveness of management in generating profit on sales, total assets and stockholders’ investment.

Examples of common profitability ratios are:

a. Gross profit ratio: It indicates the average gross margin on sales of goods. It is calculated as:

\[
\text{Gross profit ratio} = \frac{\text{Gross profit}}{\text{Annual sales}} \times 100
\]

Or

\[
\text{Gross profit ratio} = \frac{\text{Sales less cost of goods sold}}{\text{Annual sales}} \times 100
\]

A high gross profit percentage does not result in a large figure of gross profit unless it is accompanied by a large volume of sales. It indicates the total margin available to cover internal operating expenses and yield profit.

b. Operating profit ratio: It is calculated as:

\[
\text{Operating profit ratio} = \frac{\text{Operating income}}{\text{Sales}} \times 100
\]
Annual sales

Or

\[
\text{Gross profit less operating expenses} \times 100 \\
\text{Annual sales}
\]

The ratio is an indication of the company's profitability from current operation without regards to the interest charges accruing from the capital structure.

c. **Net profit ratio:** It indicates the net return on sales. It is calculated as:

\[
\frac{\text{Net profit}}{\text{Annual Sales}} \times 100
\]

Or

\[
\frac{\text{Operating income less financial expenses}}{\text{Annual Sales}} \times 100
\]

It indicated the relative efficiency of the business after taking into account all revenues and expenses.

d. **Return on investment:** This is also called return on total assets. It is calculated as:

\[
\frac{\text{Earnings before interest and taxes}}{\text{Total assets}}
\]

Or

\[
\frac{\text{Profit before taxes}}{\text{Total assets}} \times 100
\]

It indicates the return on investment in the enterprises. It measures the effectiveness of an organization in generating profit with available investment. The higher the ratio, the more effective the organization.

e. **Expense percentage (%)** : It is calculated as:

\[
\frac{\text{Individual expenses}}{\text{Total expenses}} \times 100
\]

It indicates the relative weight of each item of expense in relation to total expenses. This ratio is rarely used since the same objective can be achieved by an expense to sales percentage.

f. **Expense to sales %** : It is calculated as:

\[
\frac{\text{Total expenses}}{\text{Annual sales}} \times 100
\]

It indicates where the improvement or deterioration of net profit to sales % has occurred.

g. **Sales to total assets ratio** : It is computed as:

\[
\frac{\text{Annual sales}}{\text{Total assets}}
\]

It indicates efficiency of utilization of assets in generating revenue.
h. Sales to capital employed ratio: It is computed as:
   \[
   \frac{\text{Annual sales}}{\text{Capital employed}}
   \]

i. Sales to (individual) assets ratio: It is computed as:
   \[
   \frac{\text{Annual sales}}{\text{Individual assets}}
   \]
   Indicates the effect of individual assets on the overall figures in (g) and (i) above.

i. Net profit to capital employed %: It is computed as:
   \[
   \frac{\text{Net profit before tax}}{\text{Capital employed}}
   \]
   Indicates the overall profitability of the business.

2. Liquidity or solvency ratios: These ratios measure the ability of the firm to meet its short term and long term financial obligations. The liquidity means the ability of a firm to meet current obligations of creditors. It also indicates how current asset can be quickly converted to cash for short term liabilities (Omamu, 2011). The more a business firm is able to meet upcoming financial obligations, the more liquid it is said to be. The liquidity/solvency ratios are as follows:

a. Current ratio: It measures the extent to which the claims of short-term creditors are covered by assets that are expected to be converted to cash in a period roughly corresponding to the maturity of the liabilities. That is, current ratio indicates whether the available current assets can meet current liabilities. Standard current ratio is normally taken as 2:1 and usually regarded as satisfactory. It is calculated as:
   \[
   \text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}
   \]
   Indicates, in general, the ability of a business to meet its short-term liabilities as they fall due, out of its short-term assets.

b. Liquidity ratio: This is also called Quick Test or Acid-test Ratio. This ratio indicates business firm’s ability to meet its financial obligations without reliance on its less liquid assets. Examples of less liquid assets are stock, payment in advance. It can be computed as:
   \[
   \text{Liquidity ratio} = \frac{\text{Current assets less liquid assets}}{\text{Current liabilities}}
   \]
   It indicates the usage of all the components. The higher the ratio the more effective is the organization in generating sales through available resources.

c. Inventory to net work capital: It is calculated as:
   \[
   \frac{\text{Inventory}}{\text{Working capital}}
   \]
   The ratio shows the extent to which the company’s working capital is tied up in inventory.

3. Activity/operating efficiency ratios: Activity ratios are indication as to the efficiency with which the firm manages and uses its resources or assets. In other words, it indicates how well an organization is selling its products in relation to its available resources. It relates sales to various
assets. The ratios are as follows:

a. **Inventory or stock turnover**: It is calculated as:
   \[
   \text{Inventory or stock turnover} = \frac{\text{Cost of sales}}{\text{Average Inventory}}
   \]

   - Average stock = \(\frac{1}{2}\) Opening inventory + Closing inventory

   Indicates the velocity, in number of times per period at which the average figure of trading inventory is being “turned over”, that is, sold.

b. **Creditor payment period**: it is defined as
   \[
   \text{Creditors payment period} = \frac{\text{Trade payables}}{\text{Purchases}} \times 365 \text{ (in days)}
   \]

   Indicates the average period (in days) for which creditors remain unpaid.

c. **Debtors collection period**: It is given
   \[
   \text{Debtors collection period} = \frac{\text{Trade receivable}}{\text{Credit sales}} \times 365 \text{ (in days)}
   \]

   Indicates where the improvement or deterioration of Net Profit to sales % has occurred.

   It also indicate the average length of time the company must wait after making a credit sale before it received payment.

d. **Debtors or accounts receivable turnover**: This measures the extent to which a firm makes effective use of its account receivable. It is calculated as:

   e. **Fixed assets turnover (FAT)**: Examines the extent to which a firm uses the existing fixed assets to generate sales. It is defined as:
   \[
   \text{Fixed assets turnover} = \frac{\text{Total sales}}{\text{Non-current assets}}
   \]

   It measures sales of plant and equipment. A higher turnover is preferable.

e. **Total asset turnover (TAT)**: Measures the effectiveness of a firm in using existing resources to generate sufficient sales. It is calculated as:
   \[
   \text{Total asset turnover} = \frac{\text{Total sales}}{\text{Total assets (tangible assets)}}
   \]

   It indicated the usage of all the company’s assets. The higher the ratio the more effective is the organization in generating sales through available resources.

4. **Leverage ratios**: These ratios show the extent to which funds are provided by the owners of a firm and creditors. Thus, the ratios compare the financing of an organization by debt to its financing by its owners, an important factor in determining the borrowing capacity of the organization. When a firm finances its assets by means of any fixed charge financing such as lease, long term debts, preferred stocks and so on. It is said to be using financial leverage. The more organizational funds are furnished by creditors, the more leverage the organization is said to be employing. As a general guideline, an organization should use leverage to the extent that borrowed funds can be used to generate additional profit without a significant amount of organizational ownership being established by creditors. Financial leverage ratios therefore determine the degree to which a firm uses long
term debts, preferred stocks and leases as sources of financing its assets. Samples of leverage
ratios are:

a. **Borrowing ratio:** It is defined as:
   \[
   \frac{\text{Fixed interest loan}}{\text{Capital employed}}
   \]

b. **Debt to asset ratio:** It is defined as:
   \[
   \frac{\text{Total debt}}{\text{Total assets}}
   \]
   It shows the extent to which borrowed funds have been used to finance the company's operations.

c. **Gearing ratio:** It is defined as:
   \[
   \frac{\text{Fixed interest loan} + \text{Preference capital}}{\text{Capital employed}}
   \]
   It indicates the vulnerability of earnings available for shareholders.

d. **Interest cover (times interest earned) ratio:** It is defined as:
   \[
   \frac{\text{Net profit before taxes and interest}}{\text{Total interest charged}}
   \]
   This ratio shows the extent to which earnings can decline without the firm becoming unable to meet its annual interest costs.

e. **Long term debt to equity ratio:** This determines the relationship between the long term debt and the funds provided by the owners. It is defined as:
   \[
   \frac{\text{Total long term debt}}{\text{Total shareholders equity}}
   \]
   It indicates the balance between debt and equity in the firm's long term capital.

f. **Total debt ratio:** This measures the extent to which a firm has financed its assets by means of debt.
   \[
   \frac{\text{Total liabilities (Total long and short term)}}{\text{Total assets}}
   \]
   High debt ratio is not good for an organization because it indicates that assets of the organization are being financed by means of external. Hence, the greater amount of other people's money is used to generate profit for the owners.

5. **Equity investors' ratios:** These are ratios that enable shareholder to know whether this investment will continue to yield his required returns. The ratios are as follows:

a. **Earning per share (EPS):** It is calculated as:
   \[
   \frac{\text{Earning available to ordinary shareholders}}{\text{Number of ordinary shares}}
   \]
   It indicates the earnings available to the owners of ordinary shares.

b. **Price/earning ratio:** It is defined as:
   \[
   \frac{\text{Current market price per ordinary share}}{\text{Earnings per share}}
   \]
   It indicates whether or not a company is faster growing or less risky. Also, it indicates the number of years an investor must wait before his investment is repaid. Faster growing or less risky company tends to have higher price-earning ratios than do slower growing or more risky firms. In other words, a low price/earning ratio is preferable.
c. **Earning yield:** It is defined as:

\[
\text{Earning per share} = \frac{\text{Earning per share}}{\text{Market priced per ordinary share}}
\]

It indicates the amount earned on the share relative to their market price.

d. **Dividend yield:** It is defined as:

\[
\text{Dividend per share} = \frac{\text{Current market price per share}}{\text{Current market price per share}}
\]

It shows the current return on investment.

e. **Asset cover:** It is defined as:

\[
\text{Net assets} = \frac{\text{Net assets}}{\text{Number of ordinary share}}
\]

It shows the relationship between net assets and number of ordinary shares.

**Methodology**

All the manufacturing organizations in Nigeria constituted the population of the study. The number is somewhat infinite. Therefore the researcher decided to limit the target population to selected manufacturing organizations in Delta State namely Warri, Asaba, Sapele and Ughelli. A sample size of 80 was selected from a population of 100 using Yaro Yarmens formula which is given as:

\[
n = \frac{N}{1 + N(e)^2}
\]

Where

- **n** = Sample size sought
- **e** = Level of significant = 0.05 or 95%
- **N** = Population size = 100

\[
n = \frac{100}{1 + 100(0.05)^2}
\]

\[
= \frac{100}{1 + 0.25}
\]

\[
= 80 \text{ respondents at 95%}
\]

**Confidence Level**

The simple random sampling method was used to select the respondents. The study was conducted using the survey research design. Survey research design according to Olaitan, Ali, Eyo and Sowande (2000) is a plan, strategy, structure, that the investigator wants to adopt in order to obtain solution to research problems using questionnaire in collecting, analyzing and interpreting the data. The design is suitable for the study because it uses questionnaire to seek information from respondents. The data used in this study were obtained from both primary and secondary sources of data. The instrument of primary data collected was the questionnaire and face-to-face interview. The instruments were validated by expert in strategic planning to authenticate the relevance of the instrument. Secondary data were collected from textbooks and publications or accounting ratios.

Data collected were collated and analyzed using percentages. In addition, the hypotheses formulated were tested using the pearson product moment correlation co-efficient and the t-test at 0.05 level of significant.

**Findings and Discussions**

The tables presented below contain the analytical details relating to our findings from the respondents.
Table 1: Firms studied with number of respondents

<table>
<thead>
<tr>
<th>S/N</th>
<th>Organizations</th>
<th>No. of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Eternit Pli, Sapele</td>
<td>24</td>
</tr>
<tr>
<td>2.</td>
<td>Delta Steel Pli, Aladja</td>
<td>28</td>
</tr>
<tr>
<td>3.</td>
<td>Asaba Textile Mill Pli</td>
<td>14</td>
</tr>
<tr>
<td>4.</td>
<td>Mix and Baker Pli, Warri</td>
<td>10</td>
</tr>
<tr>
<td>5.</td>
<td>Beta Glass Pli, Ughelli</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

**Source:** Field Survey, 2014

**Hypotheses Testing and Results**

**H0:** There is no significant relationship between accounting ratios in enhancing the liquidity position of an organization.

A 5-point likert scale was used with the following response categories.

- Strongly Agree (SA) - 5 points
- Agree (A) - 4 points
- Undecided (UD) - 3 points
- Strongly Disagree (SD) - 2 points
- Disagree (D) - 1 point

5 points
4 points
The formula for the Pearson product moment correlation co-efficient is:

\[ r = \frac{N \sum XY - \sum X \sum Y}{\sqrt{(N \sum X^2 (\sum x)^2) - (N \sum Y^2 (\sum Y^2))}} \]

Table 2: Calculation of Pearson product moment correlation co-efficient

<table>
<thead>
<tr>
<th>Options</th>
<th>X points</th>
<th>Y responses</th>
<th>XY</th>
<th>X^2</th>
<th>Y^2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>5</td>
<td>40</td>
<td>200</td>
<td>25</td>
<td>1600</td>
</tr>
<tr>
<td>Agree</td>
<td>4</td>
<td>25</td>
<td>100</td>
<td>16</td>
<td>625</td>
</tr>
<tr>
<td>Undecided</td>
<td>3</td>
<td>9</td>
<td>27</td>
<td>9</td>
<td>81</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>2</td>
<td>4</td>
<td>8</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>Disagree</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>80</td>
<td>337</td>
<td>55</td>
<td>2326</td>
</tr>
</tbody>
</table>

\[ r = \frac{5 (337) - (15) (80)}{\sqrt{(5 X 55) - (152) (5 X 2326) - (80)^2}} \]

\[ r = 0.9484 \]

The above result shows that there is positive and significant relationship between accounting ratios in enhancing the liquidity position of an organization.

But there is a greater need to test further in order to justify the stated hypothesis. In doing so, test of significance will be employed.

\[ T_{cal} = \frac{r}{1-r^2} \cdot \sqrt{n-2} \]

\[ T_{cal} = 5.1808 \]

\[ t_{tab} = n-2, \alpha 0.05 = 5 - 2, \alpha 0.05 = 3, \alpha 0.05 = 2.335 \]

The decision rule here is to reject \( H_0 \) if \( T_{cal} \) is > \( t_{tab} \). Since \( T_{cal} \) is > \( t_{tab} \), \( H_0 \) is rejected which means that there is positive and significant relationship between accounting ratios in enhancing the liquidity position of an organization. This was supported by Fadeyi (2011) who stressed that effective application of accounting ratios enhances the efficiency and proper investment decisions in corporate organizations.

Hypothesis 2

\( H_0^2 \): There is no significant relationship between accounting ratios in
contributing to the operational efficiency of management in an organization.

<table>
<thead>
<tr>
<th>Options</th>
<th>X points</th>
<th>Y responses</th>
<th>XY</th>
<th>X²</th>
<th>Y²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>5</td>
<td>38</td>
<td>190</td>
<td>25</td>
<td>1444</td>
</tr>
<tr>
<td>Agree</td>
<td>4</td>
<td>26</td>
<td>104</td>
<td>16</td>
<td>676</td>
</tr>
<tr>
<td>Undecided</td>
<td>3</td>
<td>7</td>
<td>21</td>
<td>9</td>
<td>49</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>2</td>
<td>5</td>
<td>10</td>
<td>4</td>
<td>25</td>
</tr>
<tr>
<td>Disagree</td>
<td>1</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>80</td>
<td>329</td>
<td>55</td>
<td>2210</td>
</tr>
</tbody>
</table>

Source: Field Survey, 2014

$$\sum X = 15, \sum Y = 80, \sum XY = 329, \sum X^2 = 55, \sum Y^2 = 2210$$

$$r = \frac{5(329) - (15)(80)}{\sqrt{(5 \times 55) - (5 \times 2210) - (80)^2}} = 0.9228$$

From the above analysis, the result implies that there is significant and positive relationship between accounting ratios and the operational efficiency of management in the organization. But there is also the need to test further so as to justify the stated hypothesis. In doing so, test of significance will be employed.

$$T_{cal} = \sqrt{\frac{r^2}{n-2}} = \sqrt{\frac{0.9228^2}{5-2}} = 4.1492$$

$$t_{tab} = n - 2, \alpha 0.05 = 5 - 2, \alpha 0.05 = 3, \alpha 0.05$$

.. $$t_{tab} = 2.35$$

Reject $$H_0$$ if $$t_{cal} > t_{tab}$$. Since $$t_{cal} > t_{tab}$$, $$H_0$$ is rejected which means that there is positive and significant relationship between accounting ratios and the operational efficiency of management in the organization. This finding is in support of the view of Okezie (2010) which noted that accounting ratios provides avenue for examining the operational efficiency for management and the examination of the overall profitability of an enterprise is made through ratio analysis.

**Conclusion**
The study examined accounting ratios as a veritable tool for corporate investment decisions: A study of selected organizations in Delta State. The study revealed that positive and significant relationship exists between accounting ratios in
enhancing the liquidity position of an organization. There is also significant and positive relationship between accounting ratios in contributing to the operational efficiency of management in an organization.

To conclude, accounting ratios are necessary for proper investment decisions in corporate organizations.

**Recommendations**

In view of the findings and conclusion of the study, the following recommendations were proposed for effective utilization of accounting ratios by corporate organizations.

1. Never base conclusion on one ratio. Several ratios should be examined before conclusion is made.
2. Non-recurring and extra-ordinary items whether profit or loss should be eliminated when computing ratios.
3. Interpret results according to the general business conditions. Double profit might be an impressive performance but not when others are tripling their profits.
4. The general effect of inflation requires consideration in financial analysis.

Accounting records are normally kept on a cost basis (historical cost) increase in general price levels are reflected in current purchases and sales but no change is made in the recording cost of fixed assets. Under this condition, computed book value is low. The rate of return on capital for instance will be high in such a situation because of low fixed assets valuation than of the present value of the assets were used as the base.

**References**


